

Figure 6-14 The spinal cord, which provides the link between the brain and the rest of the body, is about 43 centimeters long and as flexible as a rubber hose. As the diagram shows, the spinal cord is protected by a series of bones called vertebrae that make up the vertebral column.

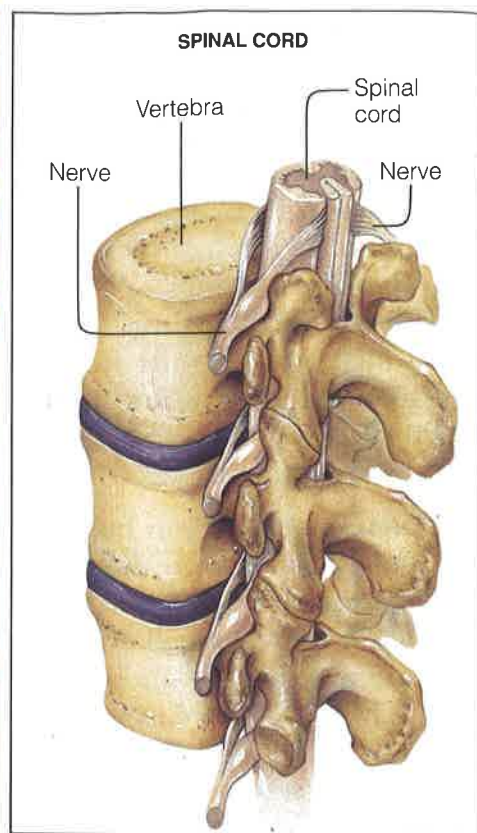
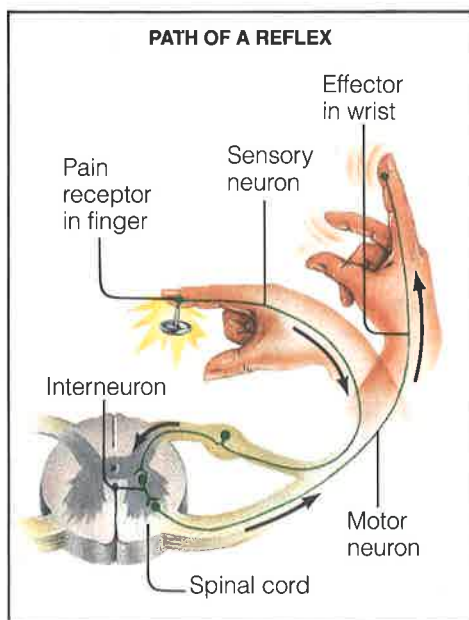


Figure 6-15 If you touch a thumbtack, you will pull your finger away from it quickly. This reaction is an example of a reflex.



nerves. These nerves carry nerve impulses to and from the spinal cord.

Quite possibly, you are so interested in reading this chapter that you do not notice a fly circling in the air above your head. But if the fly happens to come close to your eyes, your eyes will automatically blink shut. Why?

A simple response to a stimulus (fly coming near your eyes) is called a **reflex**. In this example, the reflex begins as soon as the fly approaches your eyes. The fly's action sends a nerve impulse through the sensory neurons to the spinal cord. In the spinal cord, the nerve impulse is relayed to interneurons, which send the nerve impulse to motor neurons. The motor neurons stimulate the muscles (effectors) of the eyes, causing them to contract and so you blink.

Reflexes are not only lightning-fast reactions, they are also automatic. Their speed and automatic nature are possible because the nerve impulses travel only to the spinal cord, bypassing the brain. The brain does become aware of the event, however, but only after it has happened. So the instant after you